

DAFTAR PUSTAKA

- Abeer, A., Delia, S., Brauer, Eileen, G., and Paul T.S., (2021) A modified glass ionomer cement to mediate dentine repair. *Dental Materials*. 37(8): 1307-1315.
- Agha, A., Parker, S., and Patel, M., (2020) Polymerization shrinkage kinetics and degree of conversion of commercial and experimental resin-modified glass ionomer luting cement (RMGICs). *Dental Materials*. 36: 893-904.
- Agustin, L.S., (2010) *Pengaruh Topikal Aplikasi Sodium Fluoride 1 % terhadap Kadar Fluor dalam Saliva dan Jumlah Koloni Bakteri Streptococcus alpha pada plak Gigi (kajian pada anak perempuan umur 6-8 tahun di pesantren Bin Baz)*, Yogyakarta: Tesis IKGK FKG UGM.
- Albers, H.F., (2002) *Tooth-colored Restoratives Principles and Techniques Ninth edition*. BC Decker Inc Hamilton. London.
- Amani, A., Sandra, P. and Patel, M., (2016) Development of experimental resin-modified glass ionomer cement (RMGICs) with reduced water uptake and dimensional change. *Dental Material*. 32:713-722.
- Annisa dan Iwan, A., (2018) Mekanisme fluor sebagai kontrol karies pada gigi anak. *Indonesian Journal of Paediatric Dentistry*. 1(1): 63-69.
- Anusavice, K., and Phillips, K.J., (1996) *Phillips' Science of dental materials*. Philadelphia: W.B. Saunders Company; p. 273.
- Anusavice, K., (2003) *Phillips' science of dental materials*. 11th ed. St. Louis, MO, USA; Saunders, an imprint of Elsevier.
- Anusavice, K.J., Shen, C., and Rawls, H.R., (2013) *Phillips' science of dental materials*. 12th ed. St. Louis, MO, USA; Saunders, an imprint of Elsevier; 280-282.
- Attar, N., and Turgut, M.D., (2003) Fluoride release and uptake capacities of fluoride-releasing restorative materials. *Oper Dent*; 28:395-402.
- Bansal, R. dan Bansal, T., (2015) A comparative evaluation of the amount of fluoride release and re-release after recharging from aesthetic restorative materials: an in vitro study. *J Clin Diagn Res*. 9:11-14.
- Baturina, O., Tufekci, E., Guney-Altay O., Khan, S.M., Wnek, G.E., and Lindauer, S.J., (2010) Development of a sustained fluoride delivery system. *Angle Orthod*. 80:1129-35.

- Bayrak, S., Tunc, E.S., Aksoy, A., Ertas, E., Guvenc, D., and Ozer, S., (2010) Fluoride release and recharge from different materials used as fissure sealants. *Eur J Dent.* 4(3):245-50.
- Berg, J.H., and Croll, T.P., (2015) Glass ionomer restorative cement systems: an update. *Pediatr Dent.* 37:116–24.
- Bhadra, D., Shah, N.C., Rao, A.S., Dedania, M.S., and Bajpai, N., (2019) A 1-year Comparative Evaluation of Clinical Performance of Nanohybrid Composite with Activa Bioactive Composite in Class II Carious Lesson: A Randomized Control Study. *J Conserv Dent.* 22(1): 92-96.
- Bowen, W.H., (2013) The Stephan Curve revisited. *Odontology.* Jan;101(1):2-8. doi: 10.1007/s10266-012-0092-z. Epub 2012 Dec 6. PMID: 23224410.
- Brzović, R.V., Miletić, I., Gurgan, S., Peroš, K., Verzak, Ž., and Malčić, A.I., (2018) Fluoride release from glass ionomer with nano-filled coat and varnish. *Acta Stomatol Croat.* 52(4):307-13.
- Bueno, L.S., Borges, A.F.S., Navarro, M.F.L., Nicholson, J.W., Hill, R.G. and Sidhu, S.K., (2021) Determination of chemical species of fluoride during uptake mechanism of glass-ionomer cement with NMR spectroscopy. *Dent Mater.* Jul;37(7):1176-1182. doi: 10.1016/j.dental.2021.04.011. Epub 2021 May 4. PMID: 33962790.
- Burgess, J.O., and Xu, X., (2006) *Fluoride-Releasing Material, Fundamental of Operative Dentistry: A Contemporary Approach*, Third Edition, Quantessence Publishing Co, Inc; 407-417.
- Cameron, A.C. and Widmer, R.P., (2013) *Handbook of pediatric dentistry*. 4th ed. Oxford, UK: Mosby, an imprint of Elsevier.
- Cannavo, M., Harsono, M., Finkelman, M. and Kugel, G., (2014) Microleakage of dental bulk fill, conventional and self-adhesive composites. *J Dent Res* 93:847.
- Chau, N.P., Pandit, S., Cai, J.N., Lee, M.H., and Jeon, J. G., (2014) Relationship between fluoride release rate and anti-cariogenic biofilm activity of glass ionomer cements. *Dent Mater.* 2015 Apr;31(4): e100-8. doi: 10.1016/j.dental.12.016. Epub 2015 Jan 17. PMID: 25600801.
- Cheng, L., Zhang, K., Zhang, N., Melo, M.A.S., Weir, M.D., and Zhou, X.D., 2017. Developing a new generation of antimicrobial and bioactive dental resins. *J Dent Res.* 96:855-863.

- Clesceri, L.S., Greenberg, A.E., and Trussel, R.R.(Ed)., (1989) *Standart methods for the examination of water and wastewater* (17th ed). Washington DC: American Public Health Association.
- Cole, A.S., and Eastoe, J.E., (1977) *Biochemistry and Oral Biology*, Topan Co Ltd, Tokyo; 376,383,384.
- Croll, T.P., Berg, J.H., and Donly, K.J., (2015) Dental repair material: a resin-modified glass-ionomer bioactive ionic resin-based composite. *Compend Contin Educ Dent*. Jan;36(1):60-5. PMID: 25822408.
- Cury, J.A., de Oliveira, H., dos-Santos, A.P., and Tenuta, L.M., (2016) Are fluoride-releasing dental materials clinically effective on caries control? *Dent Mater*. 2:323-333.
- Day, Jr.R.A., and Underwood, A.L., (2002) *Analisis Kimia Kuantitatif (Quantitative Analysis)*, Edisi Keenam, alih bahasa oleh lis Sopyan, Erlangga, Jakarta; 530-531.
- De Caluwe, Tamara, Vercruysse, C.W.J., Ladik, Irina, Convents, Robin, Declercq, Heidi, Martens, Luc, Verbeeck, and Ronald., (2017) Addition of bioactive glass to glass ionomer cement: Effect on the physicochemical properties and biocompatibility. *Dental Materials*. 33. 10.1016/j.dental.2017.01.007.
- De-Moor, R.J., Verbeeck, R.M. and De-Maeyer, E.A, (1996) Fluoride release profiles of restorative glass ionomer formulations. *Dent Mater*; 12:88-95.
- Dionysopoulos, D., (2014) The effect of fluoride-releasing restorative materials on inhibition of secondary caries formation. *Fluoride*. 47:258–65.
- Dionysopoulos, D., Koliniotou, K.E., Helvatzoglou, A.M. and Kotsanos, N., (2013) Fluoride release and recharge abilities of contemporary fluoride-containing restorative materials and dental adhesives. *Dent Mater J*. 34(3):410.
- Duck-Su Kim., Jongryul Kim., Kyoung-Kyu Choi, and Sun-Young Kim., (2011) The influence of chlorhexidine on the remineralization of demineralized dentine. *Journal of Dentistry*. 39(2):855-862.
- Eliades, G., Watts, D.C., and Eliades, T., (2005) *Dental Hard Tissues and Bonding*, Springer, Berlin. 81-83.
- Eun Jung Park and Sohee Kang., (2020) Current aspects and prospects of glass ionomer cement for clinical dentistry. Review article. *Yeungnam Univ J Med*. 37(3):169-178.

- Fano, L., Fano, V., Ma, W., Wang, X., and Zhu, F., (2004) Hydrolytic degradation and cracks in resin-modified glass-ionomer cements. *J Biomed Mater Res B Appl Biomater.* Apr 15;69(1):87-93.
- Featherstone, J.D.B., (2000) The Science and Practice of Caries Prevention, *J.Am Dent Assoc.* 131;887-899.
- Forsten, L., (1998) Fluoride release and uptake by glass-ionomers and related materials and its clinical effect. *Biomaterials.* 19(6):503-08.
- Frost, P.M., (2002) An audit on the placement and replacement of restorations in general dental practice. *Prim Dent Care;* 9:31-6.
- Fujimoto, Y., Iwasa, M., Murayama, R., Miyazaki, M., Nagafuji, A. and Nakatsuka, T., (2010) Detection of ions released from S-PRG fillers and their modulation effect. *Dent Mater J.* 29(4):392-7.
- Garg, N. and Garg, A., (2015) *Textbook of Operative Dentistry 3rd ed.* Jaypee Brothers Medical Publishers; 420-427.
- Garoushi, S., Vallittu, P. and Lassila, L., (2018) Characterization of Fluoride Releasing Restorative Dental Materials, *Dental Materials Journal.* 161.
- Gavic, L., Gorseta, K., Borzabadi, F.A., Tadin, A., Glavina, D. and Van Duinen R.N.B., (2016) The effect of thermo light curing on the microhardness of glass ionomer cement. *Int J Periodontics Restorative Dent.* 36:425-30.
- Glasspoole, B.A., Erickson, R.L. and Davidson, C.L., (2001) A Fluoride-releasing composite for dental applications, *Dent Mater,* 17;127-133.
- González, C.C., (2010) The chemistry of caries: remineralization and demineralization events with direct clinical relevance. *Dent Clin North Am.* 54(3):469-78.
- Gujjar, K.R., (2013) Minimally invasive dentistry. A review. *Int J Clin Prev Dent.* 9: 109-120.
- Gönülol, N., Özer, S., and Demirel, N., (2014) Microleakage evaluation of giomer flowable composites and adhesive systems in Class V cavities. *Acta Odontol Turc.* 31(1):18-22.
- Han, L., Okamoto, A., Fukushima, M. and Okiji, T., (2006) Evaluation of a new fluoride-releasing one-step adhesive. *Dent Mater J.* 25: 509-515.
- Harhash, A.Y., Elsayad, I.I. and Zaghloul, A.G.S., (2017) A comparative in vitro study on fluoride release and water sorption of different flowable esthetic restorative materials. *Eur J Dent.* 11:174-179.

- Harrison, P.T., (2005) Fluoride in water: a UK perspective. *J Fluorine Chem.* 126:1448-56.
- Hatibovic, K.S. and Koch, G., (1991) Fluoride release from glass ionomer cement in vivo and in vitro. *Swedish dental journal.* 15(6):253–8. PMID: 1817351.
- Hegde, Mithra and Jamilee, John and Darshana, Devadiga and Nidarsh, Hegde and Shetty, D., (2012) Effect of Daily fluoride exposure on fluoride release by high strength glass ionomer restorative material used with a traumatic restorative technique: An in vitro study. *International Research Journal of pharmacy.* 3(4), 241-246.
- Hicks, J., Garcia-Godoy, F. and Flaitz, C., (2003) Biological factors in dental caries: role of saliva and dental plaque in the dynamic process of demineralization and remineralization (part 1). *J Clin Pediatr Dent* 28: 47-52.
- Ikemura, K., Tay, F.R., Endo, T. and Pashley, D.H., (2008) A review of chemical-approach and ultra morphological studies on the development of fluoride-releasing dental adhesives comprising new pre-reacted glass ionomer (PRG) fillers. *Dent Mater J.* 27(3):315-39.
- Itota, T., Al-Naimi, O.T., Carrick, T.E., Yoshiyama, M. and McCabe, J.F.. (2005) Fluoride release and neutralizing effect by resin-based materials. *Oper Dent.* 30:522-527.
- John, W., Nicholson, Sharanbir, K.S. and Beata, C., (2020) Enhancing the Mechanical Properties of Glass-Ionomer Dental Cements: A Review. *Multidisciplinary Digital Publishing Institute (MDPI)* 13(11): 2510.
- Jones, J., (2015) Review of bioactive glass: from Hench to hybrids. *Acta Biomater;* 23: S53–82.
- Kan, K.C., Messer, L.B. and Messer, H.H., (1997) Variability in cytotoxicity and fluoride release of resin-modified glass-ionomer types of cement. *J Dent Res.* 76:1502-7.
- Keegan, G.M., Smart, J.D., Ingram, M.J., Barnes, L., Burnett, G.R. and Rees, G.D., (2012) Chitosan microparticles for the controlled delivery of fluoride. *J Dent.* 40:229-40.
- Khoroushi, M., Mansoori, K.T. and Hadi, S., (2012) The effect of pre-warming and delayed irradiation on marginal integrity of a resin-modified glass-ionomer. *Gen Dent.* 60:383-8.

- Kakaboura, A., Eliades, G. and Palaghias, G., (1996) An FTIR study on the setting mechanism of resin-modified glass ionomer restoratives. *Dent Mater.* 12: 173-178.
- Khoroushi, Maryam, Keshani, and Fateme., (2013) A review of glass-ionomers: From conventional glass-ionomer to bioactive glass-ionomer. *Dental research journal.* 10:411-420.
- Kiran, A. and Hegde, V., (2010) A short comparative analysis of fluoride release from a newly introduced GIC in deionized water and lactic acid. *Journal International Oral Health.* 2(2):71-78.
- Kishore, G., Sai, S.A.J., Pratap, G.M., Sridhar, M., Pranitha, K. and Sai, K.V.S., (2016) Comparative evaluation of the fluoride-releasing ability of various restorative materials after the application of surface coating agents – an in-vitro study. *J Clin Diagn Res.* 10:38–41.
- Kumiko, Y., Noriyuki, N., Yukinori, M., Hidehiko, S., Yasuhiro, Y., and Bart V. M., (2017) Bacterial adhesion not inhibited by ion-releasing bioactive glass filler. *Dental Materials,* 33(6):723-734.
- Lee, S., Dong, D., Huang, H. and Shih, Y., (2000) Fluoride ion diffusion from a glass-ionomer cement. *J Oral Rehabil* 27:576-86.
- Levallois, B., Fovet, Y., Lapeyre, L. and Gal, J.Y., (1998) In vitro fluoride release from restorative materials in water versus artificial saliva medium (SAGF). *Dent Mater.* 14:441–47.
- Maheshwari, R., (2006) Fluoride in drinking water and its removal. *J Hazard Mater.* 137:456- 63.
- Manuja, N., Pandit, I.K., Srivastava, N., Gugnani, N. and Nagpal, R., (2011) Comparative evaluation of shear bond strength of various esthetic restorative materials to dentin: an in vitro study. *J Indian Soc Pedod Prev Dent.* 29(1):7-13.
- Martínez, M.E.A., (2012) Fluoride its metabolism, toxicity, and role in dental health. *J of Evidence-Based Complementary & Alternative Med.* 17:28-32.
- Masoud, F.G., Hassan, T., Nassim, S., Azin, S. and Faezeh F.A., (2014) Fluoride release from three glass ionomers after exposure to sodium fluoride and acidulated phosphate fluoride gels. *Dental Research Journal.* 11:5.
- May, E. and Donly, K.J., (2017) Fluoride release and re-release from a bioactive restorative material. *Am J Dent.* 30(6):305-308. PMID: 29251452.

- Mickenausch, S., Mount, G. and Yengopal, V., (2011) Therapeutic effect of glass-ionomers: An overview of the evidence. *Aust Dent J.* 56:10-5.
- Mount, G.J., (2002) *An atlas of glass-ionomer cement. A clinician's guide.* 2nd ed. Martin Dunitz: London.
- Mousavinasab, S.M., and Meyers, I., (2009). Fluoride release by glass ionomer cement, compomer, and giomer. *Dental research journal.* 6(2):75–81. PMID: 21528035.
- Mundim, F.M., Garcia, L.F. and Pires-de-Souza., (2010) Effect of staining solutions and repolishing on color stability of direct composites, *J. Appl. Oral. Sci.* 18(3): 249-254.
- Musa, A., Pearson, G. and Gelbier, M., (1996) *In vitro* investigation of fluoride ion release from four resin-modified glass polyalkenoate cement. *Biomaterials.* 17:1019-23.
- Mutluay, M.S., (2016) The choices of restorative materials in primary teeth and influencing factors. *Selçuk Dent J.* 16;3(3):151-8.
- Najeeb, S., Khurshid, Z., Zafar, M.S., Khan, A.S., Zohaib, S. and Marti, J.M., (2016) Modifications in glass ionomer cement: nano-sized fillers and bioactive nanoceramics. *Int J Mol Sci.* 17:1134.
- Neel, E., Aljabo, A., Strange, A., Ibrahim, S., Coathup, M., and Young, A., (2016) Demineralization–remineralization dynamics in teeth and bone. *Int J Nanomed.* 11:4743-4763.
- Ngo, H. and Opsahl-Vital, S., (2014) Minimal intervention dentistry II: part 7. Minimal intervention in cariology: the role of glass-ionomer cement in preserving tooth structures against caries. *Br Dent J.* 216(10):561-5.
- Nguyen, S., Escudero, C., Sediqi, N., Smistad, G. and Hiorth, M., (2017). Fluoride-loaded polymeric nanoparticles for dental delivery. *Eur J Pharm Sci.* 2017; 104:326-334. 10.
- Nicholson, J.W. and Czarnecka, B., (2004) The release of ions by compomers under neutral and acidic conditions. *J Oral Rehabil.* 31:665–70.
- Nishio, M. and Yamamoto, K., (2002) The anti-dental plaque effect of fluoride-releasing light-cured composite resin restorative materials. *Japan J Conserv Dent.* 45: 459-468.
- Ong, S.H. and Yoo, S.H., (2021) Surface roughness and chemical composition changes of resin-modified glass ionomer immersed in 0.2% sodium fluoride solution. *J Dent Sci.* 16(1):389–396.

- Pameijer, C., Garcia-Godoy, F., Morrow, B. and Jefferies, S. (2015) Flexural Strength, and Flexural Fatigue Properties of Resin-Modified Glass Ionomer, *The Journal of Clinical Dentistry*, 26(1):23-27.
- Patil, S.S., Kontham, U.R., Kontham, R.K., Patil, S.S. and Kamble, S.P, (2020) Fluoride release and fluoride-recharging ability of three different sealants. *J Indian Soc Pedod PrevDent*.38(3):247-252.
- Shen, C., Ralph, R. and Josephine, F., (2022) *Phillips' Science of Dental Materials*. 13 editions. Elsevier. Part II, Chapter 5:104.
- Prakki, A., Cilli, R., Mondelli, R.F.L., Kalachandra, S., and Pereira, J.C. (2005) Influence of pH environment on polymer-based dental material properties, *European Journal of General Dentistry*. 3(3): 91–98.
- Preston, A.J., Agalamanyi, E.A., Higham, S.M., and Mair, L.H., (2003) The recharge of esthetic dental restorative materials with fluoride in vitro-two years result, *Dent Mater*, 19; 32-37.
- Rajendran, R. and Sivapathasundharam, B., (2012) *Shafer's Textbook of Oral Pathology*, 7th ed., Elsevier, New Delhi: 434.
- Rensburg, J.V., (1995) *Oral Biology*, Quintessence Publishing Co, Inc, Chicago. p:489.
- Ribeiro, J.M.C. Boaventura, Britoonçalves, Rastelli, V.S., Bagnato, J.R.C. and Saad, (2012) Degree of conversion of nanofiller and micro hybrid composite resins photo-activated by different generations of LEDs. *J Appl Oral Sci*. 20:212-217.
- Ruchika, B. and Tajinder, B., (2015) A comparative evaluation of the amount of fluoride release and Re-release after recharging from aesthetic restorative materials: an in vitro study. *J Clin Diagn Res*. 9(3):11–4.
- Rohman. (2007) *Spektrofometri uv-visible*, Yogyakarta: PT Kanisius, halaman 8.
- Ryou, H., Niu, L.N., Dai, L., Pucci, C.R., Arola, D.D. and Pashley, D.H., (2011) Effect of biomimetic remineralization on the dynamic nanomechanical properties of dentin hybrid layers. *J Dent Res*. 90: 1122.
- Dos, S.R.L., Pithon, M.M., Martins, F.O., Romanos, M.T., and Ruellas. A.C., (2012) Evaluation of cytotoxicity and degree of conversion of glass ionomer cement reinforced with resin. *Eur J Orthodont*, 34. 362-366.
- Gurgan, S., Kutuk, Z.B., Ergin, E., Oztas, S.S., and Cakir, F.Y., (2015) Four-year Randomized Clinical Trial to Evaluate the Clinical Performance of a Glass Ionomer Restorative System. *Oper Dent* 1.40(2):134–143.

- Sakaguchi, R., Ferracane, J., and Powers, J., (2019) *Craig's Restorative Dental Materials*. Fourteenth edition. 3251 Riverport Lane St. Louis, Missouri 63043. <https://lccn.loc.gov/2017051980>.
- Sereda, G., Allison V.L., and Joseph A.T., (2019) Monitoring demineralization and remineralization of human dentin by characterization of its structure with resonance-enhanced AFM-IR chemical mapping, nanoindentation. *Dental Materials*, 35(4):617-626.
- Shaymaa, I.H., (2020) Fluoride releasing/recharging ability of bulk-fill and resin modified glass ionomer cements after the application of different surface coating agents. An In-vitro study. *Advanced dental journal*.1-13.10.21608/adjc.2020.26432.1063.
- Shaymaa, M.N., Lamiaa, M.M., and Ahmed Z.E.H., (2018) Fluoride release and recharge of enhanced resin modified glass ionomer at different time intervals, *Future Dental Journal*. 4(2):221-224. ISSN 2314-7180, <https://doi.org/10.1016/j.fdj.2018.06.005>.
- Shelton and Richard., (2017) *Biocompatibility of Dental Biomaterials*, Elsevier, Duxford, p. 84-88.
- Shivana, V., and Ramakrishna, R. K., (2002) Minimal intervention and concepts for minimally invasive cavity preparations, techniques and materials – A review. *J Conserv Dent*. 5:101-9.
- Sidhu, S.K. and Nicholson, J.W., (2016) A review of glass-ionomer cements for clinical dentistry. *J Funct Biomater* 7:16.
- Slowikowski, L., John, S., Finkelman, M., Perry, Ronald, Harsono, Kugel, and Gerard., (2014) Fluoride ion release and recharge over time in three restoratives. *J Dent Res* 93: 268.
- Stanislowski, L., Daniau, X., Lautié, A., and Goldberg, M., (1999) Factors responsible for pulp cell cytotoxicity induced by resin-modified glass ionomer cements. *J Biomed Mater Res*. 48: 277-288.
- Subramani, K., and Ahmed, W., (2012) *Emerging nanotechnologies in dentistry: materials, processes, and applications*. Waltham, MA, USA: William Andrew, an imprint of Elsevier.
- Szczesio-Włodarczyk, A., Sokolowski, J., Kleczewska, J., and Bociong, K., (2020) Ageing of Dental Composites Based on Methacrylate Resins-A Critical Review of the Causes and Method of Assessment. *Polymers (Basel)*. 10;12(4):882. doi: 10.3390/polym12040882. PMID: 32290337; PMCID: PMC7240588.

- Tantbirojn, D., Douglas, W.H., and Versluis, A., (1997) Inhibitive effect of a resin-modified glass ionomer cement on remote enamel artificial caries. *Caries research*. 31(4):275–80. <https://doi.org/10.1159/000262411> PMID: 9197933.
- Tay, F., Pashley, E., Huang, C., Hashimoto, M., Sano, H., and Samles, R., (2001) The Glass Ionomer Phase in Resin Based Restorative Materials., *J Dent Res*, 80: 1808-12.
- Tay, W., and Braden, M., (1988) Fluoride ion diffusion from polyalkenoate (glass-ionomer) cements. *Biomaterials* 9:454-6.
- Ten-Cate, J., (2008) Remineralization of deep enamel dentine caries lesions. *Aust Dent J* .53:281-285.
- Tiskaya, M., Al-Eesa, N.A., Wong, F.S.L., and Hill, R.G., (2019) Characterization of the bioactivity of two commercial composites. *Dent Mater*. Dec;35(12):1757-1768. doi: 10.1016/j.dental.2019.10.004. Epub 2019 Nov 5. PMID: 31699444.
- Tiwari, S., Kenchappa, M., Bhayya, D., Gupta, S., Saxena, S., Satyarth, S., Singh, A., and Gupta, M., (2016) Antibacterial activity and fluoride release of glass-ionomer cement, compomer, and zirconia reinforced glass-ionomer cement. *J Clin Diagn Res*.10: 90-93.
- Tressaud, A., and Haufe, G., (2008) *Fluorine and health: molecular imaging, biomedical materials and pharmaceuticals*. Oxford, UK: Elsevier.
- Yoon, R.H., Lee, Y.K., Lim, B.S., and Kim, C.W., (2002) Degree of polymerization of resin composites by different light sources. *J Oral Rehabil*, 29:1165-1173.
- Ullah, R., and Zafar, M., (2015) Oral and dental delivery of fluoride: A review. *Res. Rev. Fluoride* 48, 195–204.
- Upadhyay, S., Rao, A., and Shenoy, R., (2013) Comparison of the amount of fluoride release from nanofilled resin modified glass ionomer, conventional and resin modified glass ionomer cements. *Journal of dentistry (Tehran, Iran)*. 10(2):134–40. PMID: 23724212.
- V.Qvist., (1993) Resin restorations: leakage, bacteria, pulp. *Endodont Dent Traumatol*, 9 :127-152.
- Van Dijken, J.W.V., Pallesen, U., and Benetti, A., (2019) A randomized controlled evaluation of posterior resin restorations of an altered resin modified glass ionomer cement with claimed bioactivity, *Dental Materials*,35: 335-343.

- Verbeeck, R.M., De Maeyer, E.A., Marks, L.A., Moor, R.J., De Witte, A.M., and Trimpeneers, L.M., (1998) Fluoride release process of resin modified glass ionomer cements versus polyacid modified composite resins. *Biomaterials*. Mar;19(6):509-19.
- Walsh, L.J., and Brostek, A.M., (2013) Minimum intervention dentistry principles and objectives. *Aust Dent J*. 58 Suppl 1:3-16. doi: 10.1111/adj.12045. PMID: 23721333.
- Wiegand, A., Buchalla, W., and Attin, T., (2007) Review on fluoride-releasing restorative materials: fluoride release and uptake characteristics, antibacterial activity and influence on caries formation. *Dent Mater*. 23:343-62.
- Williams, J.A., Billington, R.W., and Pearson G.J., (2002) The glass ionomer cement: the sources of soluble fluoride. *Biomaterials*; 23: 2191–200.
- Wilson, A.D., and Kent, B.E., (1972) A new translucent cement for dentistry: the glass ionomer cement. *Br Dent J* .132:133–5.
- Winston, A.E., and Bhaskar, S.N., (1998) Caries Prevention in the 21st Century *J. Am Dent Assoc*, 129(11):1579-1587.
- Xu, X., and Burgess, J.O., (2003) Compressive strength, fluoride release and recharge of fluoride-releasing materials. *Biomaterials*. 24(14):2451-61.
- Xuedong, Z., (2015) *Dental caries: Principles and Management*, Springer, Berlin, 59-60.
- Yap, A.U.J., and Mok, B.Y.Y. (2002) Surface Finish of A New Hybrid Aesthetic Restorative Material, *Oper Dent*, 27(2): 161-66 13.
- Zafar, M.S., (2013) Effects of surface pre-reacted glass particles on fluoride release of dental restorative materials. *World Applied Sciences Journal*. 28:457-62.
- Zafar, M.S., and Ahmed, N., (2015) Therapeutic roles of fluoride released from restorative dental materials. *Fluoride*. 48:184-94.
- Zhou, X., Wang, S., Peng, X., Hu, Y., Ren, B., and Li, M. (2018) Effects of water and microbial-based aging on the performance of three dental restorative materials. *J Mech Behav Biomed Mater* 80:42-50.